

# Seattle City Light Distribution Branch

## Presentation to City Light Advisory Board

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Deputy Superintendent  
August 12, 2003

# Agenda / Outline

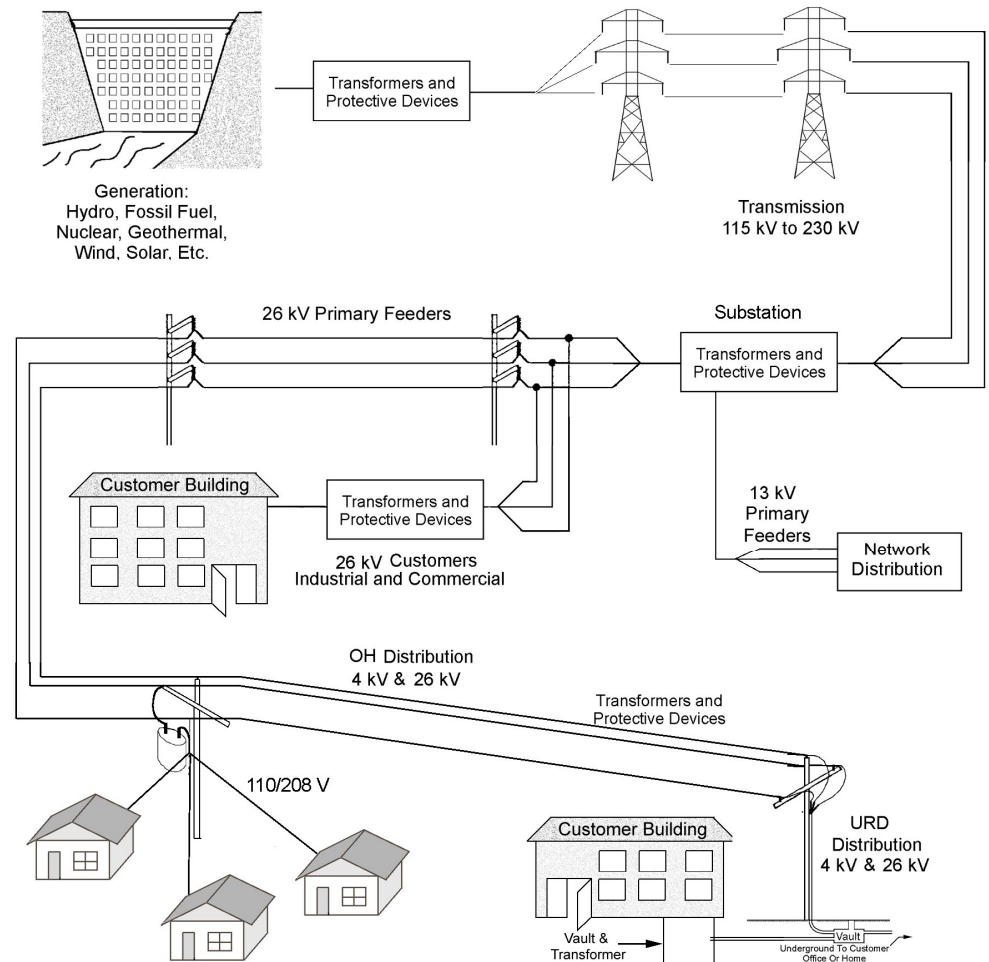
- Sense of where we've been and where we are
- Projects, programs, costs and service levels
- Issues, challenges and priorities looking forward
- Feedback, additional detail and advice

## Mission

Provide the electrical system infrastructure sufficient to distribute electricity to City Light customers and ensure that they are promptly connected to a reliable system at a reasonable cost in an environmentally sound manner.

# Power Delivery

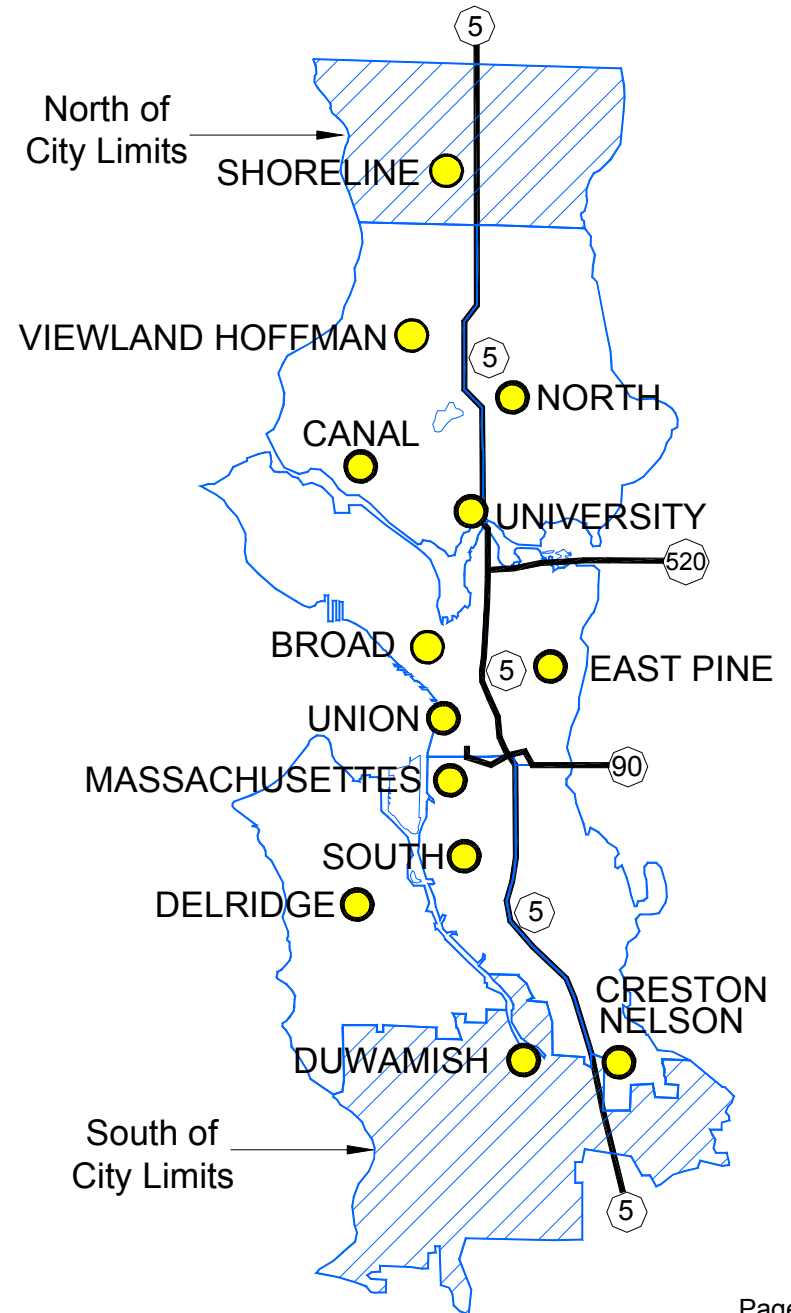
- Electricity is **generated** or **purchased**
- Delivered to local area by **transmission wires**
- Transformed at **substations** to manageable voltages
- Brought to homes and businesses by **feeders**



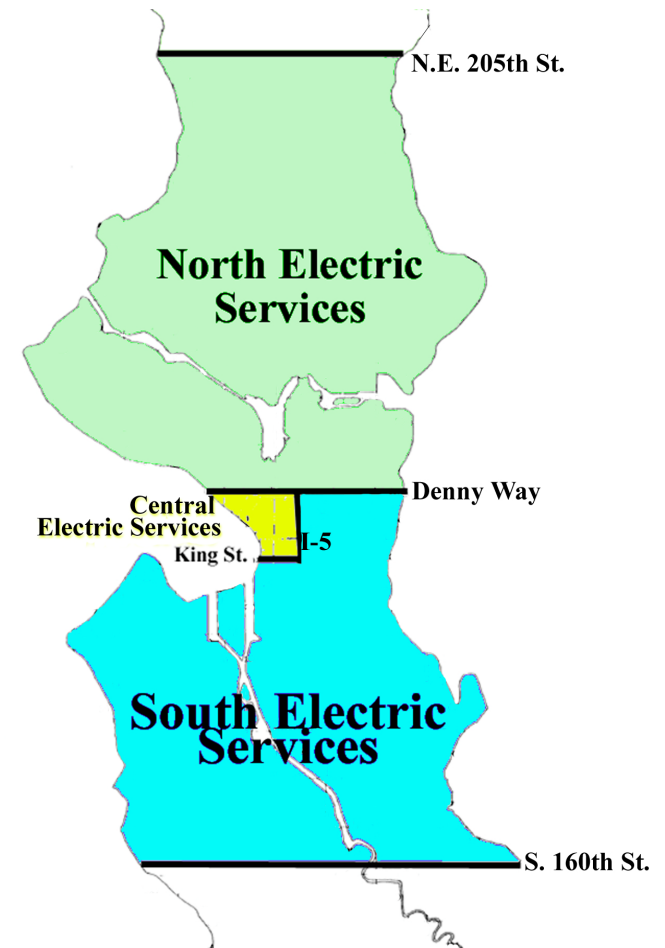
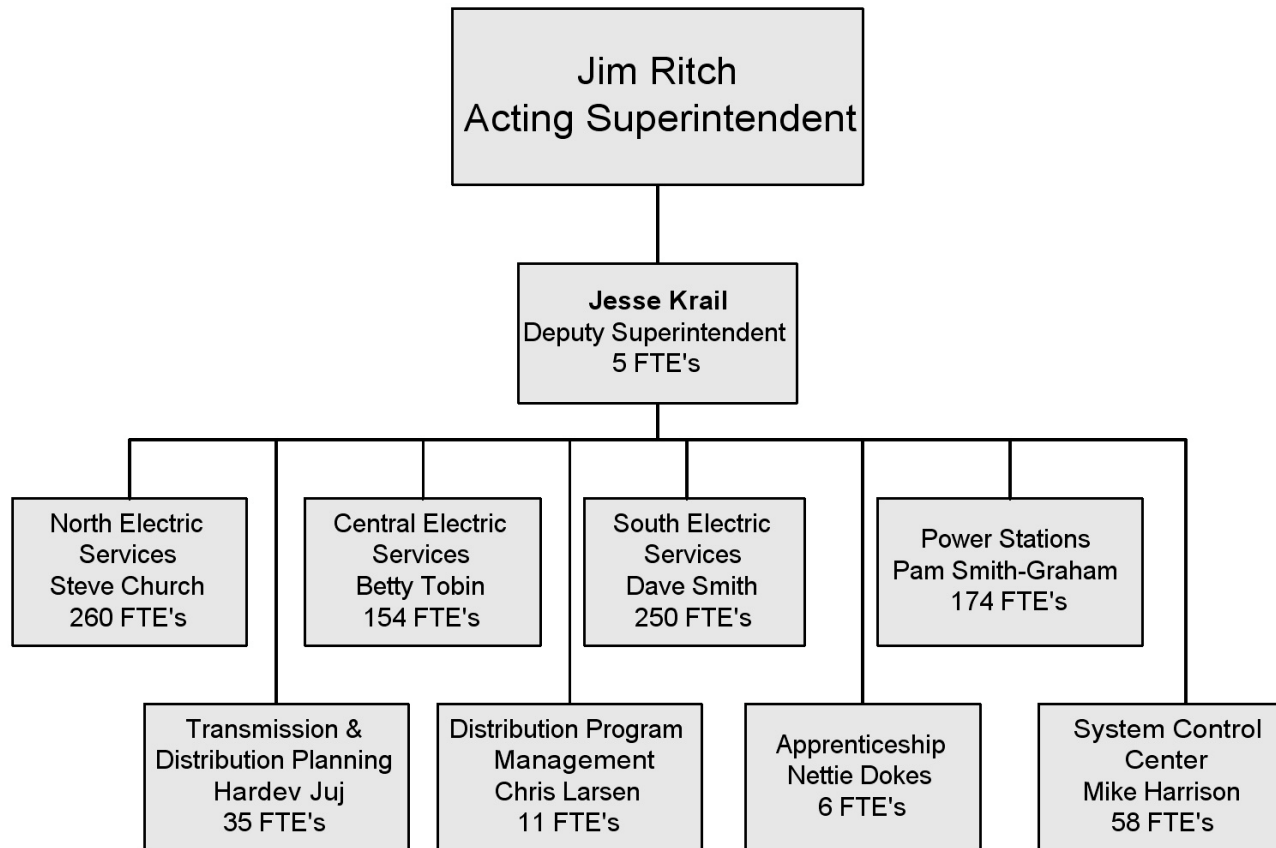
# Service Territory

## Transmission and Distribution Infrastructure

Transmission Circuit Miles	650
Receiving Substations	14
Distribution Circuit Miles	2,400
26 kV Feeders	172
13 kV Feeders	73
Distribution Transformers	53,000
Meters	376,000
Poles	100,000
Street Lights	95,000



# Distribution Branch Divisions and Positions



# 1996 City Light Business Plan

## Strategic Direction

- Safe, reliable, high quality system operated in an environmentally responsible manner
- Minimize impacts on neighborhoods
- Take advantage of new technology

## Major Initiatives

- Rehabilitate downtown network
- System maintenance & reliability

# Report Card

- Network Strategic System Plan
- Substation Strategic Plan, RCM and work management
- Feeder inventory and condition assessment, Phase I
- 4 kV to 26 kV conversion nearly complete
- Improved outage tracking and reporting
- Still lacking comprehensive work management system
- Implemented Council performance measures; need more effort on additional Distribution measures
- Improved project management for outside agency projects; need more effort on other Distribution projects
- Established Power System Technology Unit
- Negotiated network night shift

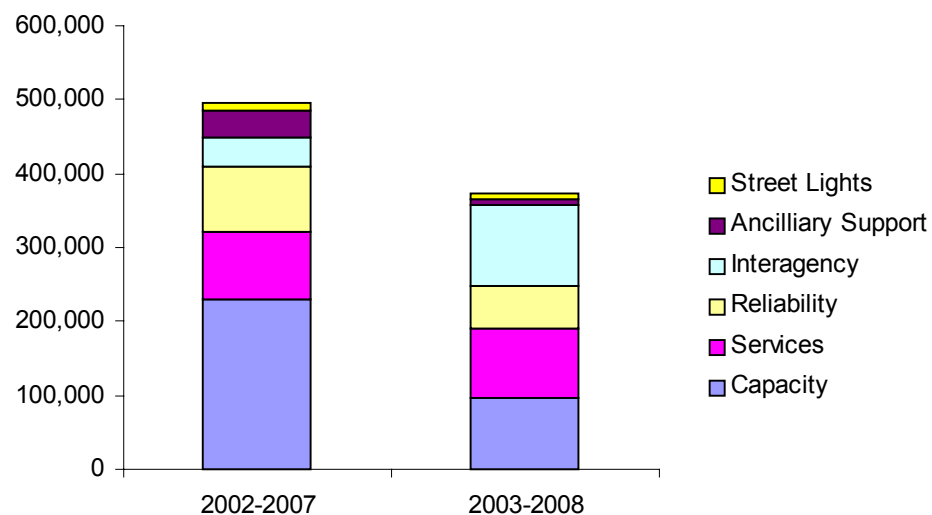
# What's New or Different Today

- Reduced O&M and CIP budgets
- More tightly integrated power delivery organization
- Focus on interagency transportation and economic development projects
- High-tech, Bio-tech
- Increased emphasis on capacity, automation and project management
- Security

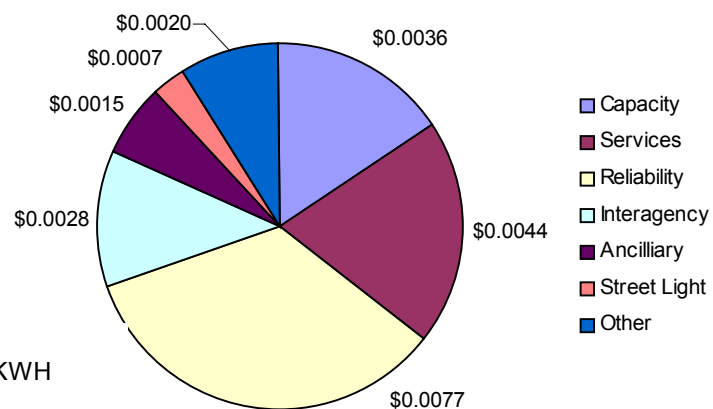


# Power Delivery Program Categories

- ♦ **Capacity** - Add/replace or repair/ maintain to manage existing and necessary capacity to accommodate new or increasing load where it is needed.
- ♦ **Services** - Connect new or expanded electrical services, add/ replace or repair/ maintain distribution infrastructure or relocate for customers.
- ♦ **Reliability** - Improve the reliability, extend the life, and replace failing components of the power delivery system and provide emergency response.
- ♦ **Interagency** - Support electrical infrastructure requirements associated with City and Regional capital projects.
- ♦ **Ancillary Support** - Provide equipment and materials to support the power system.
- ♦ **Street Lights** - Add/ replace or repair/ maintain arterial and residential street light systems.
- ♦ **Other Business Line Support (O&M Only)** Provide material and labor, safety programs and training to support corporate services and power supply business lines.

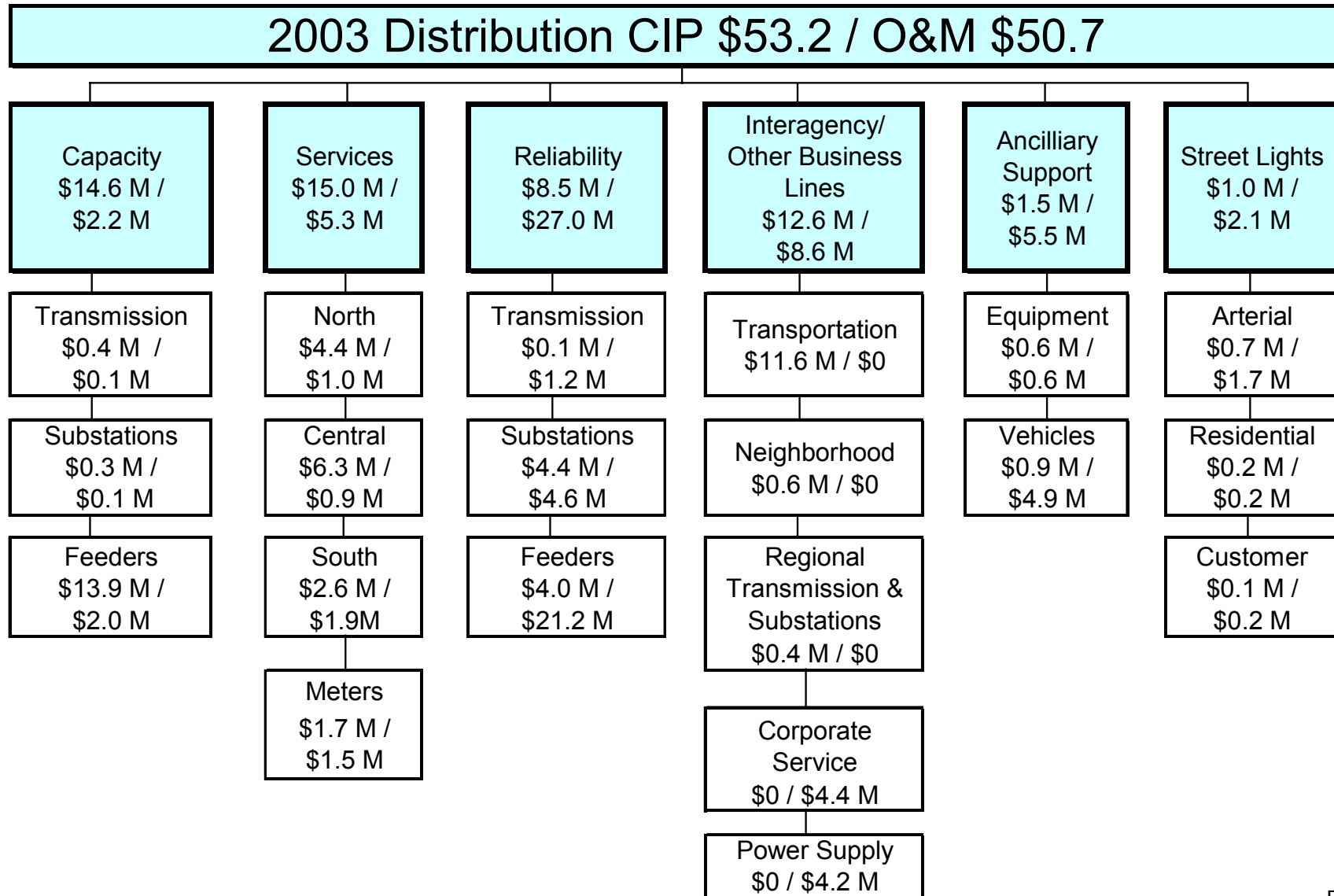


\$ Thousands



Total =  
\$0.0226 per KWH

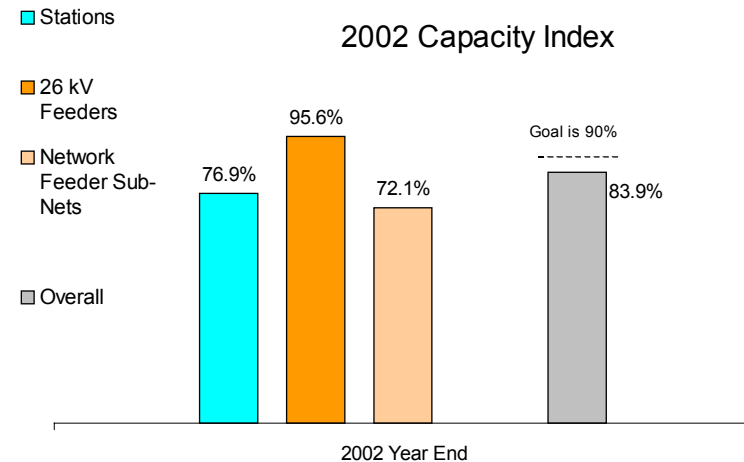
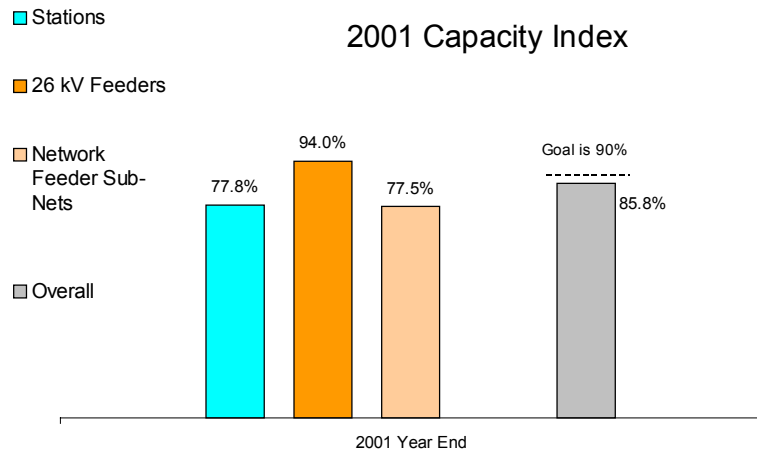
# Distribution Budget



# Capacity (1 of 2)

## Capacity Policies:

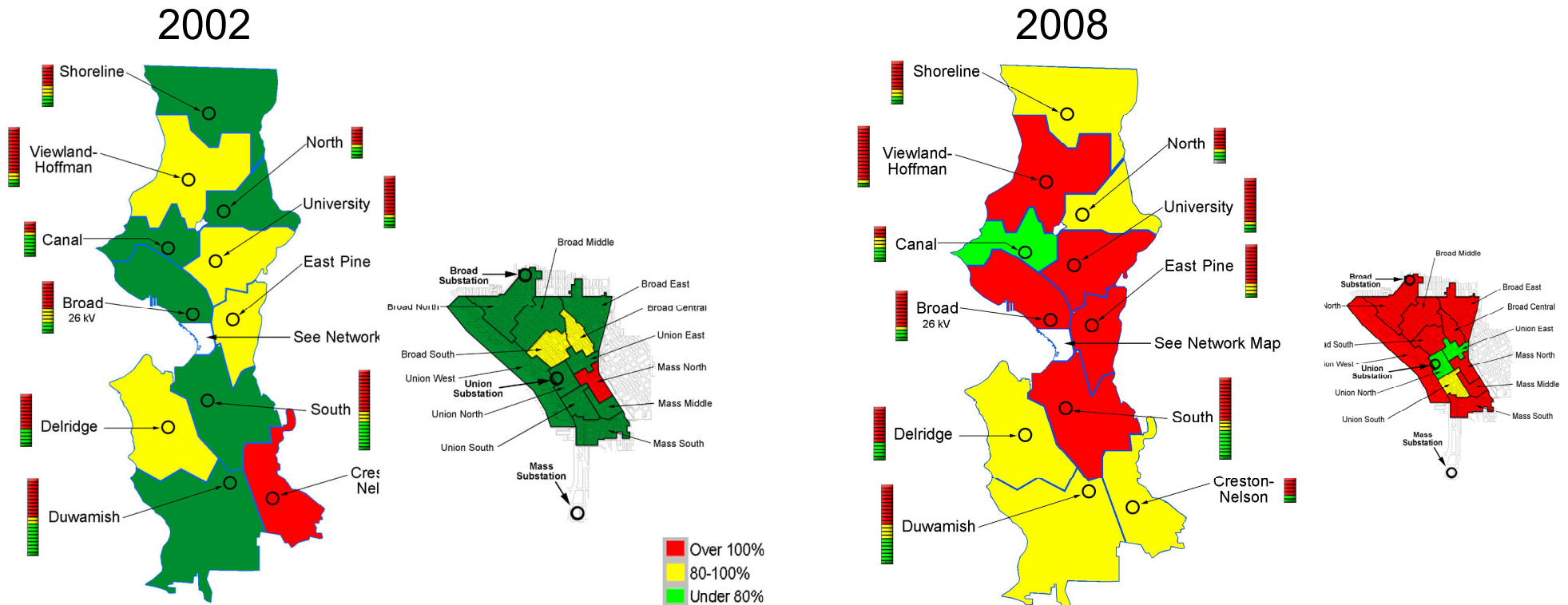
- We have an obligation to serve
- We don't compromise other customers' reliability
- We design to National codes & utility industry standards
- We design for peak loads (highest 4 hours in last 5 years)
- We operate for N-1 reliability at substations
- We load our feeders to 50% to enable switching during outages



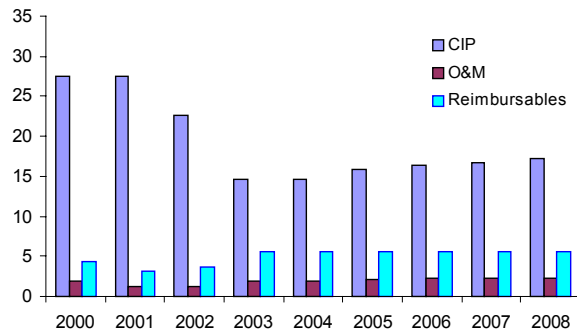
4/10 cent per KWH

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# Capacity (2 of 2)



Capacity Program Budgets



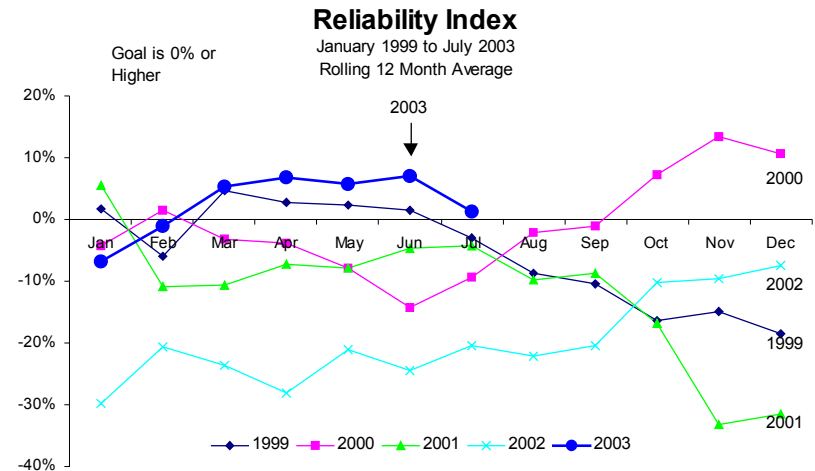
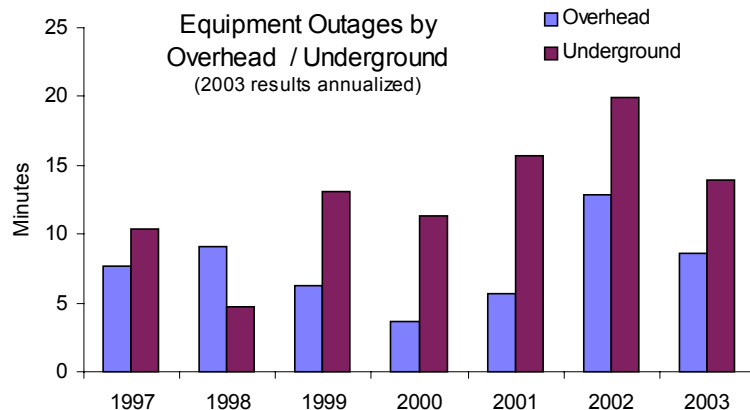
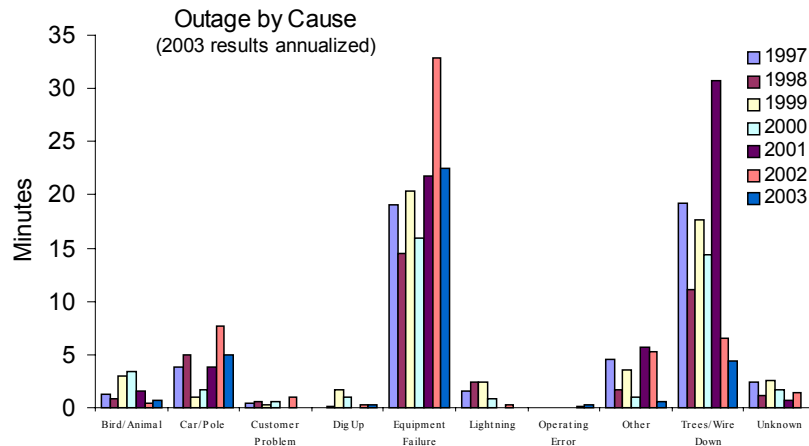
## Growth Areas

- Downtown Network
- South of Downtown (SODO)
- South Lake Union

# Reliability

## • Reliability Index Metric for Council

Based on the City Light goal that the average customer will experience a maximum of one outage per year (SAIFI) lasting no more than 50 minutes (SAIDI).



### Cautionary notes:

#### • Transmission

Historically underfunded

Condition assessment underway

Oil filled cable replacement is expected to be underfunded

#### • Feeders

\$17 M programmed, 2003-2008

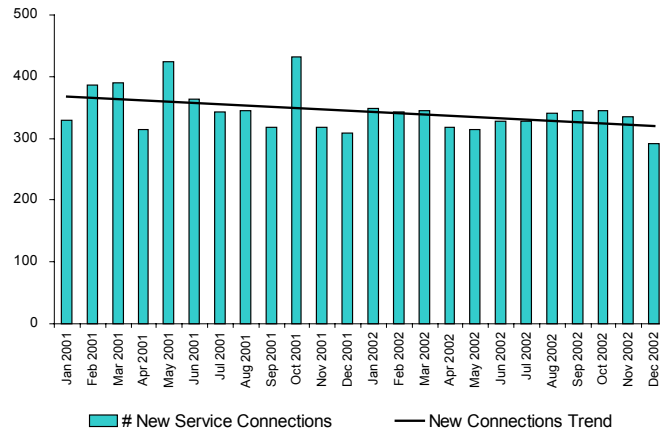
Feeder assessment underway

Aging underground systems (direct burial) are expected to be underfunded

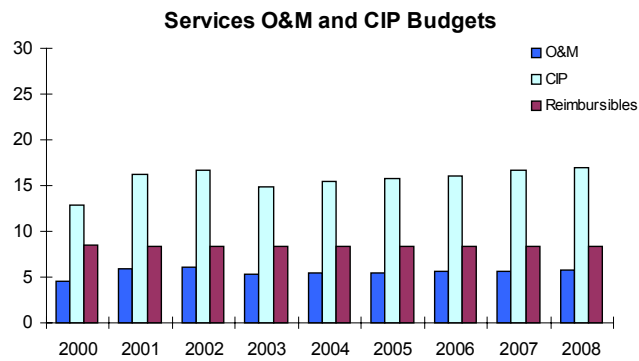
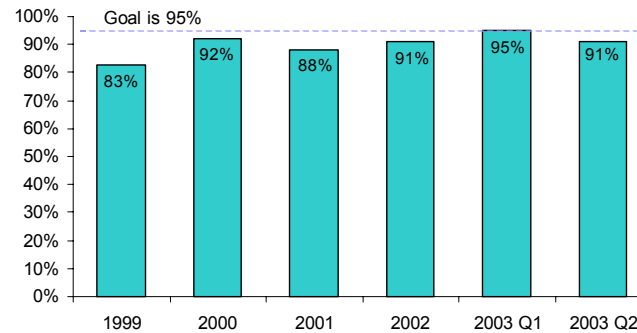
8/10 cent per KWH

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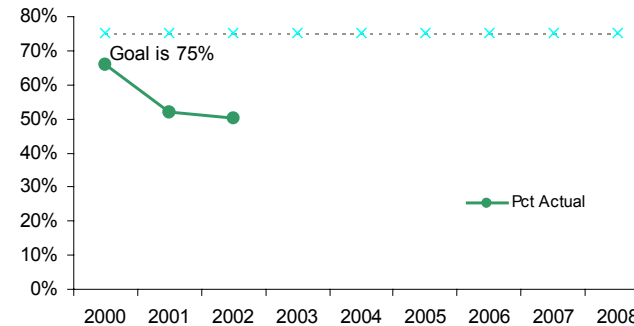
# Service Connections



Service Connections  
Percent Completed Within 5 Days of Request



Reimbursables Target

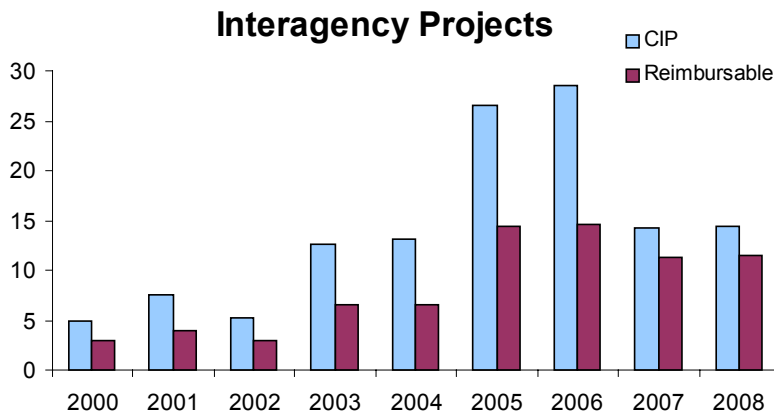


Cautionary Note: New large load escapees may require special or additional measures to fully recover service related capacity costs.

1/2 cent per KWH

# Interagency Support

- Sound Transit
- Monorail
- South Lake Union
- Alaskan Way Viaduct
- City of Seattle and Suburban City Transportation Projects



Cautionary note: assumes full reimbursement for Alaskan Way Viaduct and monorail.

# Closing

- More detail is available
- Advice and feedback is most welcome